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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,964	08/29/2006	Keisuke Maruyama	L8612.06123	5627
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STEVENS, DAVIS, MILLER & MOSHER, LLP 1615 L. STREET N.W. SUITE 850 WASHINGTON, DC 20036			EXAMINER NGUYEN, HOANG V	
			ART UNIT 2821	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/590,964	<b>Applicant(s)</b> MARUYAMA ET AL.	
	<b>Examiner</b> Hoang V. Nguyen	<b>Art Unit</b> 2821	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 August 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-17 and 22-27 is/are rejected.
- 7) ☒ Claim(s) 3 and 18-21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/29/06</u> | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 27 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 27 recites the limitation “the magnetic member” in line 2. There is insufficient antecedent basis for this limitation in the claim. Neither claims 14 nor claim 8, where claim 27 depends from, recites “a magnetic member”. Clarification/correction required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 6-10, 14, 17 and 22-26 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2000-269724 (Hereinafter JP ‘724).

Regarding claim 1, JP ‘724 (Figure 1) discloses a loop antenna unit having a plurality of loop antennas, the antenna unit comprising a first loop antenna 3<sub>2</sub> to which an electric current is fed; and a second loop antenna 3<sub>1</sub> surrounding the first loop antenna to which the electric current is not fed.

Regarding claim 2, as applied to claim 1, JP '724 further discloses a grounded metal member 1, the first loop antenna 3<sub>2</sub> and the second loop antenna 3<sub>1</sub> being connected to the metal member.

Regarding claim 6, JP '724 (Figure 1) discloses a radio communication medium processor comprising the loop antenna unit according to claim 1; and a reading and writing part connected to the first loop antenna 3<sub>2</sub> of the loop antenna unit to carry out at least one of processes of reading and writing information stored in a radio communication medium through the first loop antenna, a signal current from the reading and writing part being fed only to the first loop antenna.

Regarding claim 7, as applied to claim 6, JP '724 (Figure 1) further discloses a third loop antenna 3<sub>3</sub> to which an electric current is not fed, the third loop being arranged adjacently to the loop antenna unit according to claim 1.

Regarding claim 8, JP '724 (Figure 1) discloses a loop antenna unit including a loop antenna 3<sub>2</sub> communicating with a radio communication medium and having a pair of opening end parts at both ends and a metal member 1 arranged closely to the loop antenna, wherein the metal member is electrically connected to one of the opening end parts of the loop antenna with a space about 1/200 to 1/4000 times as long as the wavelength of a communication frequency.

Regarding claim 9, as applied to claim 8, JP '724 (Figure 1) teaches that the loop antenna 3<sub>2</sub> supplies an electric power and transmit data to the radio communication medium in accordance with an electromagnetic induction and obtains receive data from the radio communication medium in accordance with a load variation.

Regarding claim 10, as applied to claim 8, JP '724 (Figure 1) shows that the metal member 1 is arranged substantially in parallel with a main surface of the loop antenna.

Regarding claim 14, as applied to claim 8, JP '724 (Figure 1) shows that the area of the metal member 1 is not smaller than about 1.1 times as large as the area of the opening part of the loop antenna.

Regarding claim 17, as applied to claim 8, JP '724 (Figure 1) shows that one of the pair of the opening end parts is connected to a ground terminal of a reading and writing part for reading, writing or reading and writing data of the radio communication medium, and the other of the pair of the opening end parts is connected to a signal terminal of the reading and writing part.

Regarding claim 22, as applied to claim 8, JP '724 teaches that the loop antenna unit is accommodated in a housing.

Regarding claim 23, as applied to claim 8, JP '724 (Figure 1) shows that a plurality of the loop antenna units are arranged linearly, in radial directions or on arrays substantially on the same planes.

Regarding claim 24, as applied to claim 23, JP '724 (Figure 1) shows that the plurality of the loop antenna units include electric current fed loop antenna units to which the signal current is fed and non-electric current fed loop antenna units to which the signal current is not fed.

Regarding claim 25, as applied to claim 8, JP '724 further shows the reading and writing part for reading, writing or reading and writing the data on the radio communication medium, wherein the plurality of the loop antenna units include the electric current fed loop antenna units

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to which the signal current is fed and the non-electric current fed loop antenna units to which the signal current is not fed.

Regarding claim 26, as applied to claim 25, JP '724 teaches that the reading and writing part is connected only to the electric current fed loop antenna units among the plurality of loop antenna units.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4, 11-13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2000-269724 in view of Endo et al (US 2005/0162331 A1).

Regarding claim 4, JP '724 discloses a loop antenna unit having a plurality of loop antennas, the antenna unit comprising a first loop antenna to which an electric current is fed; and a second loop antenna surrounding the first loop antenna to which the electric current is not fed; and a grounded metal member, the first loop antenna and the second loop antenna being connected to the metal member. JP '724 does not disclose a magnetic member disposed between the first loop antenna and the second loop antenna and the metal member. Endo (Figure 3A) discloses a loop antenna unit having a magnetic member 5 disposed between a loop antenna 4 and a metal member 7. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ JP '724's loop antenna unit with a magnetic member disposed

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between the first loop antenna and the second loop antenna and the metal member, as taught by Endo, doing so would yield a desired radiation characteristics for a desired application.

Regarding claim 11, JP '724 discloses the claimed invention except that a magnetic member is disposed between the loop antenna and the metal member. Endo (Figure 3A) discloses a loop antenna unit having a magnetic member 5 disposed between a loop antenna 4 and a metal member 7. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ JP '724's loop antenna unit with a magnetic member disposed between the loop antenna and the metal member, as taught by Endo, doing so would yield a desired radiation characteristics for a desired application.

Regarding claim 12, as applied to claim 11, Figure 3A of Endo shows that the magnetic member 5 is disposed substantially in parallel with the main surface of the loop antenna 4.

Regarding claim 13, as applied to claim 11, Figure 3A shows that the magnetic member 5 is disposed with a prescribed space from the loop antenna 4 and from the metal member 7.

Regarding claim 15, as applied to claim 11, Endo teaches that the magnetic member has a flexibility.

7. Claims 5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '724 in view of JP 2004-213582 (Herein after JP '582).

Regarding claim 5, JP '724 discloses the claimed invention except a first circuit unit including a resonance circuit and a matching circuit connected to the first loop antenna and a second circuit unit including a resonance circuit, a matching circuit and a matched load connected to the second loop antenna. JP '582 (Figure 2) discloses a loop antenna unit comprising a first circuit unit including a resonance circuit and a matching circuit connected to

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the first loop antenna and a second circuit unit including a resonance circuit, a matching circuit and a matched load connected to the second loop antenna. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the JP '724 loop antenna unit with a first circuit unit including a resonance circuit and a matching circuit connected to the first loop antenna and a second circuit unit including a resonance circuit, a matching circuit and a matched load connected to the second loop antenna, as taught by JP '582, doing so would enable desired impedance matching for optimum antenna performance.

Regarding claim 16, JP '724 discloses the claimed invention except that one of the pair of the opening end parts is electrically connected to the metal member, an unbalanced type resonance circuit and a ground terminal of a matching circuit, and the other of the pair of the opening end parts is connected to the unbalanced type resonance circuit and a signal terminal of the matching circuit. JP '582 (Figure 2) discloses a loop antenna unit having an unbalanced type resonance circuit and a ground terminal of a matching circuit, and the other of the pair of the opening end parts is connected to the unbalanced type resonance circuit and a signal terminal of the matching circuit. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the JP '724 loop antenna unit with an unbalanced type resonance circuit and a ground terminal of a matching circuit, and the other of the pair of the opening end parts is connected to the unbalanced type resonance circuit and a signal terminal of the matching circuit, as taught by JP '582, doing so would enable desired impedance matching for optimum antenna performance.



***Allowable Subject Matter***

8. Claims 3 and 18-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 3, JP '724 fails to specifically teach, in combination with other limitations, a single grounding cable for connecting the first loop antenna and the second loop antenna to the metal member.

Regarding claim 18, neither JP '724, JP '582 nor Endo specifically teach, in combination with other limitations, that in the loop antenna unit, the loop antenna, the magnetic member, the metal member, a first isolating member disposed between the loop antenna and the magnetic member and a second isolating member disposed between the magnetic member and the metal member are laminated.

Claims 19-21 would have been found allowable for depending on claim 18.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 7,154,449 discloses a loop antenna unit comprising a plurality of loop antennas.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang V. Nguyen whose telephone number is (571) 272-1825.

The examiner can normally be reached on Mondays-Fridays from 8:00 a.m. to 4:00 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Owens can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hvn  
11/17/07

/Hoang V Nguyen/  
Primary Examiner, AU 2821